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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/057,455 04/09/98 HAMADA

T 19680-01

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MMC2/0531

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EXAMINER

BERMAN, T

ART UNIT

PAPER NUMBER

2881

DATE MAILED:

05/31/01

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 13

Application Number: 09/057,455

Filing Date: April 09, 1998

Appellant(s): HAMADA, TAKEHIKO

Thomas W. Perkins
For Appellant

EXAMINER'S ANSWER

MAILED
MAY 31 2001

GROUP 2800

This is in response to appellant's brief on appeal filed April 18, 2001 A statement identifying the real party in interest is contained in the brief.

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

The statement of the status of the claims contained in the brief is correct.

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The summary of invention contained in the brief is correct.

The appellant's statement of the issues in the brief is correct.

Appellant's brief includes a statement that claims 15 and 20 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

The copy of the appealed claims contained in the Appendix to the brief is correct.

5,703,373

PECKERAR et al.

12-1997

Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Peckerar et al. This rejection is set forth in prior Office Action, Paper No. 8.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which appellant regards as the invention. This rejection is set forth in prior Office Action, Paper No. 8.

Appellant argues that Peckerar et al. does not disclose the "position detecting means" claimed in claim 15. Instead, according to appellant:

"Peckerar et al. already know the position of the apertures in the fiducial pattern and [are] only concerned with the position of the electron beam relative to the

film on which the beam makes a useful image since they want to be sure that the beam is in the correct position on the film when making the image."

However, it must be noted that Peckerar et al. finds the "position of the electron beam relative to the film" by finding the position of the electron beam relative to fiducial electron beam detectors which are at known positions on the workpiece on which the film is deposited. Since Peckerar et al.'s fiducial electron beam detectors inherently comprise the bottoms of holes 16 through an insulating film 12, appellant's argument is basically that the claimed function of "detecting the position of the bottom of said contact hole, with reference to the scanning start position of said electron beam and the position when the detected current changes," is different from Peckerar et al.'s function of detecting the position of a scanning electron beam with respect to the position of the bottom of a hole through an insulating film. This argument is unconvincing because knowledge of the position of object A (the electron beam) relative to object B (the hole) inherently also indicates the position of object B relative to object A. This is implicitly recognized by Peckerar et al. at lines 5-8 in column 8 of the patent which discuss a modification of the means for detecting current flow through the workpiece as the electron beam scans across it "to improve the ability to locate the leading and/or trailing edges of the apertures 16."

With respect to the rejection of claim 20 under the second paragraph of 35 U.S.C. 112, appellant argues that claim 20 is definite because it claims a system which can detect both the bottom of a contact hole and a gate electrode on a gate oxide film. However, the requirements for the system for detecting the bottoms of contact holes claimed in claim 15 and the requirements for the system for detecting a gate electrode on a gate oxide film claimed in claim 20 are mutually exclusive. Claim 15 requires : "a voltage applying means for applying a voltage to a

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rear surface of said silicon substrate which is scanned by said electron beam, so that when said electron beam is bombarded onto a surface of said insulating film, an electron current does not flow in said silicon substrate....” No limitation is placed on the insulating film other than that it be insulating. Claim 20, on the other hand, claims: “when said electron beam is bombarded onto said gate oxide,...said electric current flows in said circuit component as the result of said electron beam that flows as said electric current through said gate oxide film, said device region and said silicon substrate to said voltage applying means because of the voltage applied to said rear surface of said silicon substrate....” Since an oxide film is inherently an insulating film and nothing in claim 15 excludes any type of insulating film, claim 20 requires that the voltage applied to the rear of the silicon substrate be set so that when the electron beam bombards the oxide film, an electric current both flows and does not flow through the substrate. This is clearly impossible.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

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jb

May 27, 2001

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